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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,259	01/07/2004	Akihiko Aoyagi	HSJ920030192US1	6713
36023 7590 05/07/2007 HITACHI GLOBAL STORAGE TECHNOLOGIES, INC. 5600 COTTLE ROAD, NHGB/0142 IP DEPARTMENT SAN JOSE, CA 95193			EXAMINER TUGBANG, ANTHONY D	
			ART UNIT 3729	PAPER NUMBER
			MAIL DATE 05/07/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/753,259

Applicant(s)

AOYAGI ET AL.

Examiner

A. Dexter Tugbang

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13, 20 and 22-29 is/are pending in the application.
- 4a) Of the above claim(s) 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13 and 22-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The applicant(s) response filed on January 25, 2007 has been fully considered and made of record.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

3. The drawings, i.e. replacement sheets for Figures 1 and 2, were received on January 25, 2007. These drawings have been approved by the examiner.

Election/Restrictions

4. Claim 20 continues to stand as being withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 19, 2006.
5. Newly submitted Claims 23 and 25 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons.

The elected invention is Species A, Figure 3 and the features of Claims 23 and 25 are not directed to, or are not shown in, Figure 3. Furthermore, the features of Claims 23 and 25 are disclosed as separate embodiments (page 4, lines 4-11), thus each is held as being patentably distinct from one another.

Since applicant has received an action on the merits for the originally presented invention (i.e. Species A), this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, Claims 23 and 25 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

6. Claims 13, 22, 24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the AAPA in view of Kitahara et al.

The AAPA (page 1-2 of the specification and Prior Art Figures 1 and 2) discloses a method of assembling an actuator system comprising: placing a lower bearing (e.g. 24) on a shaft (e.g. 28); placing an actuator arm (e.g. 12) on the lower bearing; and placing an upper bearing (e.g. 26) on a shaft. The AAPA also teaches applying an adhesive and curing the adhesive, but the AAPA applies the adhesive between an outer race of the upper bearing and a sleeve.

Regarding Claim(s) 22, 24, 27 and 28, the AAPA further teaches that the upper and lower bearings (e.g. 26, 24) have equivalent inner bores and equivalent outer diameters, as well as a flange (e.g. 29) to retain the lower bearing and a gap (region between bearings in Fig. 2) between the actuator arm and the shaft.

The AAPA does not specifically teach applying an adhesive between the inner race of the upper bearing and the shaft, applying an axial preload force to the inner race of the upper bearing; curing the adhesive and releasing the preload force.

Kitahara shows that it is conventional in the art of manufacturing shafts with bearings to apply an adhesive between an inner race (e.g. 57 in Fig. 9) of an upper bearing (e.g. 56) and a shaft (e.g. 72), apply an axial preload force (e.g. F in Fig. 9) to the inner race of the upper bearing, cure the adhesive, and release the preload force. The purpose of utilizing such manufacturing steps above is to minimize vibration in the bearings and provide a force to the upper bearing to allow the adhesive to be applied and cured so that the inner race is secured to the shaft (all of above of which is discussed at col. 7, lines 44+).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the AAPA by adding such manufacturing steps of applying an adhesive between the inner race of the upper bearing and the shaft, applying an axial preload force to the inner race of the upper bearing; curing the adhesive and releasing the preload force, as taught by Kitahara, for the advantages of minimizing vibration in the bearings and securing the inner race to the shaft.

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over the AAPA in view of Kitahara, as applied to Claim 13 above, and further in view of Muraki et al 6,761,785.

The AAPA, as modified by Kitahara, discloses the claimed manufacturing method as relied upon above in Claim 13. The modified AAPA method, however, includes a sleeve to receive the upper bearing and the lower bearing. The actuator arm system of the modified AAPA method does not include a sleeve.

Muraki shows that actuator arm systems (e.g. in Fig. 5) can be assembled without any sleeve such that the upper bearing (e.g. 3) and lower bearing (e.g. 4) are directly received by the shaft (e.g. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the AAPA by assembling the actuator arm system without any sleeve, as taught by Muraki, to positively provide ease in manufacturing by excluding at least one less manufacturing part, i.e. the sleeve.

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over the AAPA in view of Kitahara, as applied to Claim 13 above, and further in view of Sakuragi 5,949,165.

The AAPA, as modified by Kitahara, discloses the claimed manufacturing method as relied upon above in Claim 13. The modified AAPA method does not teach that the shaft has a threaded hole in the top of the shaft.

Sakuragi shows that it is known to provide a threaded hole (see Fig. 3) in the top of the shaft (e.g. 101) for the purpose of enclosing the actuator arm system within a housing (e.g. cover plate 127) by connecting the housing to the shaft through a fastener.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of the AAPA by providing a threaded hole in the top of the shaft, as taught by Sakuragi, for the purpose of enclosing the actuator arm system so that the system is protected from the environment during operation.

Response to Arguments

9. The applicant(s) arguments filed on January 25, 2007 have been fully considered but they are not persuasive.

The applicant(s) argue that the prior art above does not teach “placing an actuator arm on the lower bearing” (line 4 of Claim 13).

The examiner most respectfully disagrees. The term “on” does not mean that the actuator arm has to be in direct contact with the lower bearing, thus, the claim *would not exclude* any sleeve, particularly with the open ended transitional phrase of “comprising” (line 2). Therefore, the limitations of “placing...bearing” (line 4 of Claim 13) are met by the AAPA by virtue of the actuator arm being located on the sleeve and the sleeve being located on the lower bearing, and accordingly, the actuator arm is then located on the lower bearing.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

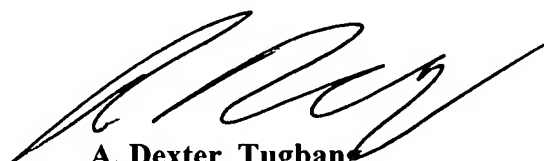
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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570.

The examiner can normally be reached on Monday - Friday 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



A. Dexter Tugbang
Primary Examiner
Art Unit 3729

April 25, 2007